Chloe Troulan – Hard and Soft Coastal Engineering

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| **Strategy** | **Hard or Soft Rock** | **Description** | **Advantages** | **Disadvantages** |
| **Sea Walls** | Hard | Is a layer between the coastline and the ocean to protect the shoreline from erosion and flooding. They are built from large rocks and pebbles, concrete, metal or plastic. | * Helps stop flooding and erosion * A space for recreation (fishing etc.) * Reduces wave energy | * The wall will at some point require replacement or to be repaired * Large waves can still go over them |
| **Beach Nourishment** | Soft | A sediment is brought onto beaches where sediments have been lost through erosion. They are used to stop the oceans from taking over the beaches. | * Cheaper * Looks better * And is naturally better * Keeps beaches longer | * Can cause environmental problems * Can harm marine life * Still quite expensive |
| **Rock armour** | Hard | It is used to “armour” shorelines from erosion and is made up of different types of rocks such as: granite, limestone etc. This reduces the impact of the waves. | * Decrease the waves energy * Lessens the waves ability to erode things by trapping the water in between the rocks | * The people have to import the rocks |
| Groynes | Hard | A structure that is built to create beaches and stop the beaches from washing away by long shore drift. Made of wooden or concrete barriers and they block the movement of materials on the beach. | * Creates beaches and keeps the sand on the beaches * Prevents erosion | * Erodes the down current side of the groyne * It can be expensive depending on the material * Can cause other beaches to become eroded |
| **Managed Retreat** | Soft | Encouraging people to move away from shore lines and stopping the construction on areas that are likely to be flooded. | * Mimimizes human suffering by moving buildings to safer ground before serious sea related issues can happen * Less expensive | * Legal process involved * It costs a lot of money to demolish buildings and clean up areas * Not all people want to sell their properties |
| **Cliff Face Strategies** | Hard | By installing drains at the top of the cliffs, this strengthens them, allowing them to remove the rainwater quickly so that the cliffs do not collapse. | * Benefits tourism (because people can walk along cliffs or sit on the tops at restaurants etc.) * Prevents cliffs from collapsing | * Not a long term thing, would have to be repaired sometimes or even replaced. * Can cause problems further down the coast. * Can sometimes be unattractive |
| **Revetments** | Hard | These are usually built where a sea wall is too expensive. They are slatted barriers that break the wave force and keep the beach material behind them, protecting the cliff base. | * They are better than sea walls * Prevent erosion and flooding | * They can look unattractive * They are not sustainable in the long term * They don’t always give full protection |
| **‘Do Nothing’** | soft | When people do not do anything about erosion etc. | * Doesn’t harm nature * Not expensive | * Flooding and erosion * Loss of beaches * Allows peoples buildings to collapse |